Flex 236 v2 Webinar

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About this webinar

- **Standards**
- **Why** we need inclusive data
- The **importance of data** in standards development
- Overview of **aims, objectives and uses** of the Flex 236 v2
- **Scope and structure** of the Flex 236 v2
- Key **terms and data laws**
- Steps in the Flex 236 v2…

Step 01

Identifying the **need for and scope** of inclusive data in standards

Step 02

Selecting data and analysing data for use in standards development

Step 03

Maintaining the inclusivity of data used within standards development

Why standards matter

Standards are essential to individual lives, industries, and societies.

They provide a framework for consistency, quality, safety, and innovation, contributing significantly to individual wellbeing, industry efficiency, and the global economy.

Standards cover a huge number of topics, including:

- Products
- Services
- Processes
- Management systems
- Industries

Different types of standards - PAS vs. Flex

Selecting between a PAS or Flex depends on an industry's level of maturity and stability.

PAS (Publicly Available Specification)

A PAS is the preferred choice for industries with a relatively stable environment where changes are not expected to occur rapidly.

- Generally, it takes 8-13 months to produce a PAS.
- The development phase includes a dedicated one-month public consultation period.
- PAS may result in a single version based on the defined specifications.

Flex

A Flex is ideal for industries that experience rapid changes, where adaptability and flexibility are paramount.

- Production process in around 3 months.
- The methodology provides opportunities for extended public consultation to gather feedback for further improvement.
- Highly iterative process with a commitment to at least 2 versions, ensuring that the process is responsive to changes and feedback.

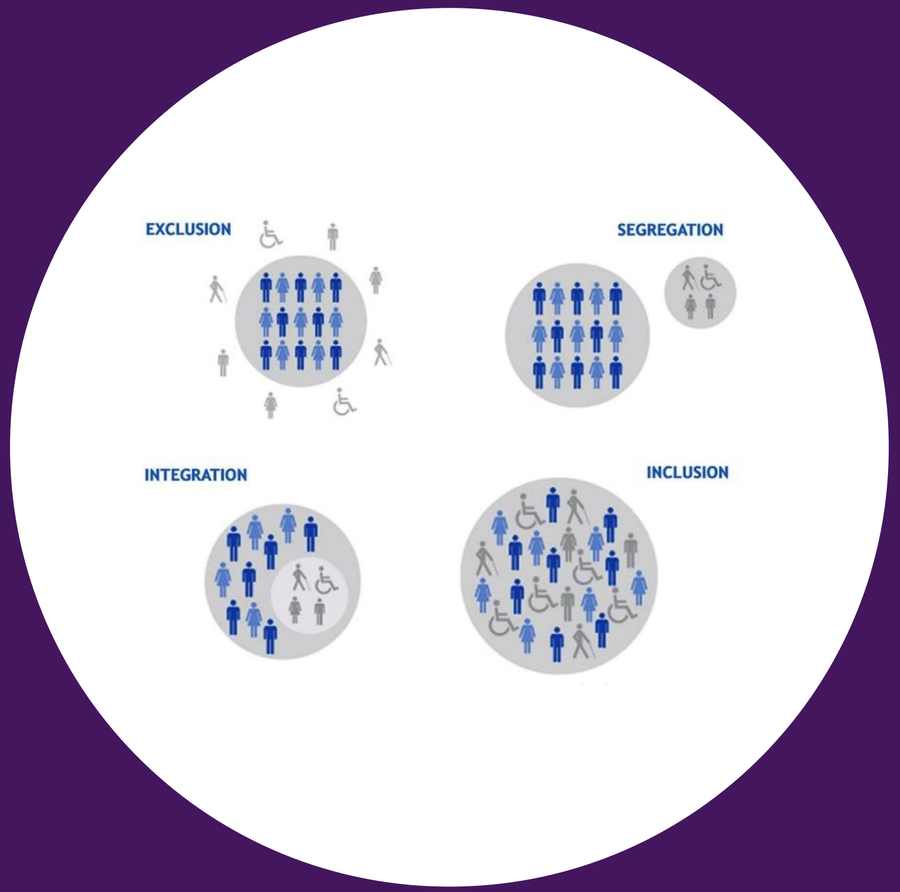
Defining inclusivity

"There is a substantial difference between integration and inclusion. Integration is the process of making a person adapt to or fit into society, while inclusion refers to the process of changing society to include everyone."

Disability Inclusive Language Guidelines, United Nations

"[Inclusivity is] the idea that everyone should be able to use the same facilities, take part in the same activities, and enjoy the same experiences, including people who have a disability or other disadvantage:"

Cambridge Dictionary



The importance of data in inclusivity

Broadly

- Data plays a critical role in helping us **understand the experiences and needs** of groups within society.
- This insight can, in turn, be used to **inform policies and services** that increase the likelihood of all groups having a **fair opportunity to flourish**.

When done right, data offers critical benefits in relation to lesser heard groups…

- Robust (qualitative and/or quantitative) insights for **evidence-based decision-making** reduce the likelihood of costly missteps.
- **Empowering** lesser-heard groups, by providing a platform to represent themselves.
- Truly **holistic insight** into communities, showcasing their nuances and heterogeneous nature:
- Too often the narrative is focused on **subgroups** or formulated by **third parties.**
- This can lead to gaps in knowledge, misunderstandings and sadly, the perpetuation of restrictive, and often **harmful**, stereotypes.

The role of data in industries and society

Data is critical to the way industries and societies function.

Definition of data:

Reinterpretable representation of information in a formalized manner suitable for communication, interpretation, or processing.

Data comes in different forms:

- Analog or Digital
- Numerical, textual, image, or audio

Data is even more important now, as data is:

- A crucial element of processes and technologies such as AI, robotics, and machine learning.
- Embedded in every aspect of the digitally enabled economy.
- Central to decision-making of businesses, organisations and governments.
- Used at a velocity and scale that affects all individuals and their day-to-day lives (e.g. algorithms that shape service experiences).

Understanding data bias

All data have context, including why, when and how the data were collected.

The level of bias in data is influences by how data is:

- Collected
- Processed
- Interpreted based on lived experiences

Types of bias that impact data:

- **Bias, social:** tendency, inclination or opinion that is preconceived or unreasoned that hinders impartial judgement.
- **Bias, technical:** deviation from the truth in the collection, analysis, interpretation and publication of data which can cause false conclusions.

Types of data bias and the implications

Data bias and the exclusion it introduces, at scale, has dangerous consequences for the entire population.

Sampling

Often the data are based on small, **relatively homogenous** (e.g. lacking sufficient data across characteristics such as age, ethnicity, sex, education, sexual orientation) **subsets** of the population.

Artificial Intelligence

Part of AI's utility is in the machine's ability to perceive patterns in data, and then derive a set of rules from those pattern. AI perceives unrepresentative data to be the **only reality that exists** (because it is the only reality the machine has been exposed to and trained on).

Given the velocity of AI uptake and the risk of using non-inclusive, incomplete, discriminatory and unrepresentative data sets, there is a **risk of bias being replicated at scale** and embedded in the systems of our daily lives and governance.

Industry

A growing body of research has shown how the failure to use representative or inclusive data has had **negative consequences** for the development of hiring algorithms, university allocation, credit scoring, medical decision making, bail decisions and facial recognition.

Who is the BSI Flex 236 for?

Flex 236 v2 - Enabling the development of inclusive standards – Understanding the role of data and data analysis – Guide

This BSI Flex is for standards makers and organizations that develop standards, which might include small and medium-sized enterprises, and organizations that do not have National Standards Body status.

It could also be used by government and other organizations for the development of policies, procedures and regulations

- It **builds the capability** of standards makers to work with data with inclusion in mind.
- It helps grow an understanding of the **limitations of data.**
- It helps **minimize harm** and to produce more robust outputs that will serve a diverse population without bias.
- It helps standards makers develop their **confidence and expertise.**
- It strengthens the **risk management** of the organizations that develop standards.

Contributing to UN Sustainable Development Goals with BSI Flex 236

The BSI Flex 236 aligned with achieving the United Nations' Sustainable Development Goals (SDGs) 5 and 10.

By promoting an inclusive approach to standards development, including diverse perspectives and addressing data biases, BSI Flex 236 helps to create standards that support gender equality and reduce inequalities.

Organizations and standard makers can contribute to the global SDG agenda by incorporating the principles of BSI Flex 236 into their operations.

Empowering women and girls through gender equality is not just a basic human right, but also improves health, education, and economic outcomes for society, leading to a better world.

Inequality negatively impacts economic growth, social cohesion, and political stability. To address it, social, economic, and political inclusion must be promoted, and development **benefits should be shared equally** among all members of society.

The scope of the BSI Flex 236 v2

BSI Flex 236 v2.0 covers:

- The ways data are **selected, assessed and used** in standards development, including different data types and processing.
- How to deal with **gaps in and/or limitations** of existing data when developing inclusive standards.
- Analysis of types of **human bias**.
- How cognitive biases can change the way data are **interpreted and incorporated** into decision-making processes.
- How data can **introduce bias or exclusion** into the standards development process.
- The impacts of data bias or exclusion and the **communities affected** – this can include impacts related to protected characteristics, as well as non-protected characteristics.

Note: BSI Flex 236 does not cover specific aspects of product or service design; or data privacy or security.

Identifying the need for and scope of standards

Consider:

- Including diverse stakeholders
- Groups the standard is likely to impact (positively or negatively)

Selecting data and analysing data

Consider if data are:

- Inclusive
- Debiased
- Diverse in perspectives

Maintaining the inclusivity of data used within standards development

- Analysis approaches
- Quality procedures

Ensuring inclusivity within the data life-cycle

Standards development can perpetuate historical inequities present in previous data. Using inclusive data presents an opportunity to mitigate these inequities:

- When new systems are being designed and new standards are created, we can **revisit and rectify old assumptions**.
- Standards makers can ensure that the **data sets and analysis approaches** that shape standards have a focus on inclusion.

The Flex 236 v2 guides standards makers on how to embed an inclusive approach through the whole standards development and refinement process.

Key terms used in Flex 236 v2

Data governance: Process focused on managing the quality, consistency, usability, security and availability of information.

Discrimination: Unjust or prejudicial treatment of different categories of people.

Diversity: Characteristics of differences and similarities between people.

Equality: State of being equal, especially in status, rights, opportunities or outcomes.

Fairness: Principle that everyone is subject to procedures that are equitable and, as far as possible, free from systematic bias.

Harm: Negative impacts to people, communities or environments.

Historically marginalised groups: Historically marginalized groups refer to communities, ethnicities, races, or social categories that have experienced systematic discrimination, exclusion, or unequal treatment over a significant period of time.

Intersectionality: The interconnected nature of social categories. Individuals may experience overlapping systems of discrimination and privilege based on various aspects of their identity, such as race, gender, class, and more.

Standard maker: Individual or group taking part in the development of a standard.

Legal protections and data regulations – UK and EU examples

Standards makers that operate globally need to navigate the landscape of global, regional and national data regulations to ensure they handle data responsibly and legally.

Equality Act 2010

The Equality Act in the UK safeguards individuals across nine key protected characteristics, designed to promote equality and prevent discrimination. These characteristics, covering various aspects of life, including employment, education, housing, and goods/services, grant legal protection against discrimination.

- **Age:** Protection against age discrimination for both younger and older individuals.
- **Disability:** Protection for people with disabilities, ensuring reasonable accommodations.
- **Gender Reassignment:** Safeguarding transgender individuals from discrimination based on gender identity.
- **Marriage and Civil Partnership:** Protecting individuals in these partnerships from discrimination.
- **Pregnancy and Maternity:** Covering discrimination related to pregnancy, childbirth, and maternity.
- **Race:** Protection against discrimination based on race, ethnicity, or nationality.
- **Religion or Belief:** Safeguarding individuals with specific religious or philosophical beliefs.
- **Sex:** Protection against discrimination based on sex or gender.
- **Sexual Orientation:** Ensuring protection for individuals of different sexual orientations.

Legal protections and data regulations – UK and EU examples

General Data Protection Regulation (EU GDPR)

GDPR demands heightened care when collecting, handling and storing data, particularly that deemed to be sensitive/special category data.

Individuals have the right to:

- Be informed about the collection and use of their data
- Access their personal data
- Rectify inaccurate or incomplete data
- Restrict or object to the processing of their data
- Lodge complaints with a supervisory authority

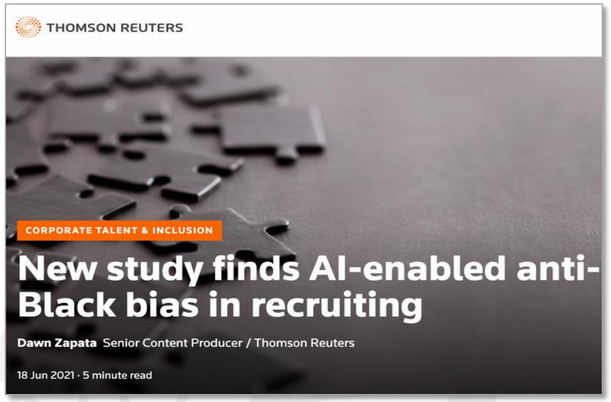
Step 01

Identifying the need for and scope of inclusive data in standards

An inclusive understanding of the target audience

Whether you're creating a new standard or reviewing an existing one, it's important to think about who will be impacted by it.

- Without inclusive data, some people may be overlooked or left behind.
- Take the time to evaluate potential impacts and ensure that everyone is accounted for, especially those who may be negatively impacted.



Inclusive input in the standards development process

Those who input on standards are also bringing data – their interpretation, and perspectives can either help us become more inclusive or introduce bias.

- When developing standards teams, ensure that you have diverse perspectives involved (groups are not monolithic and so a range of perspectives should be included).
- Encourage a diverse range of stakeholders to offer feedback, particularly at public comment phases. This will help to evolve the standard to make it more inclusive.

Step 02

Selecting data and analysing data for use in standards development

Types of data included in standards development (examples)

Provided Data: Information that is supplied or given from an external source (e.g. third party vendor).

Observed Data: Information gathered through direct observation or measurement (e.g. ethnographic research).

Derived Data: Information that is calculated from existing data through a defined process or transformation (e.g. regression analysis of existing data sets).

Inferred Data: Conclusions drawn or predictions made based on available data and logical reasoning (e.g. the probability of something happening).

Proxy Data: Substituted or indirect data used when direct measurement is challenging or impossible.

Reference Data: Standardized data used as a benchmark or reference point.

Synthetic Data: Artificially generated data designed to mimic real-world data patterns (e.g. datasets created to test machine learning models).

Secondary data: Information collected by a source other than the individual user. It can also involve the repurposing of existing data sets for new insights or interpretations.

Primary data: Information collected directly from individuals, generally through methods such as surveys, interviews, or experiments.

Assessing the inclusivity of data used in standards development

The data and the purpose of the data should be reviewed to establish their inclusivity and implications for the standard being developed.

Broadly consider:

- How inclusive is/was the data used to inform the first version of the standard?
- Is there additional data available to support the standard?
- How inclusive is additional data that is available?
- Does more (primary or secondary) data need to be commissioned or gathered?

Assess types of bias in the data.

These relate to how, why and when the data are collected, and include but are not limited to:

- Behavioural, including those informed by social or cognitive factors;
- Funding;
- Historical;
- Measurement;
- Observer;
- Representation;
- Sampling;
- Self-selection

Documenting data inclusivity - Rationale

Standards makers should document the rationale for selecting and using specific types of data, including the strengths and limitations of each source.

- The source used and why
- Why available competing data are not used
- Who the data are collected from
- How data were collected
- If the data are to be updated or a one-time collection activity

Documenting data inclusivity - Impact Assessments and mitigating negative consequences

Given that data used in standards could contribute to reinforcing social and ethical problems and inequalities, additional assessments should be completed and documented.

Data provenance assessment: Establishing where, how and why data have been collected, the origin of the data, and the changes data have undergone during their lifetime are critical to the process of understanding both the utility and potential bias of the data set.

General impact assessment: Standards makers should conduct an impact assessment for any in-development standards covering, broad impacts of the standard and the methodology used to develop it.

Equality impact assessments: Standards makers should conduct an equality impact assessment that is people-centred in order to develop standards that support human differences, including statements about which human differences were taken into account.

Groups experiencing positive consequences: Standards makers should identify and document which specific groups benefit from the data or use of the standard. All potential users of the standard and all those potentially affected by the use of the standard should be taken into account.

Algorithmic impact assessment (AIA): An algorithmic impact assessment (AIA) shows the level of risk of the algorithm, ranging from little to no impact, to moderate, high and very high impact. The AIA is typically conducted before a data model is designed, and certainly before it is deployed.

Real-world testing: Standards makers should conduct real-world testing of draft standards, where possible, or crucial parts of standards, to check they create equal outcomes for all those affected.

Data quality assessment: As specified by the ISO 8000 series, the purpose of data quality assessment is to enable the effective identification and resolution of quality issues in data sets.

Step 03

Maintaining the inclusivity of data used within standards development

Data governance - General

To ensure data governance and quality, it is crucial to establish a process that will be revisited over time to reflect changes in user needs.

This process should be implemented, refined and repeated with the following questions in mind:

- Have there been any changes in circumstances that could affect the standard's initial understanding of inclusivity and fairness? If so, how can we adjust?
- If any unanticipated threats or harms have emerged from the standard's use, how can they be mitigated?
- If the standard could be used in the context of an automated process or decision support mechanism project, how can we ensure sufficient human oversight?
- Do users and subjects have the ability to raise concerns?
- What governance mechanisms enable technical specialists to challenge the data in the standard?
- What actions are required if the standard is no longer inclusive?

Data governance – Specific measures

Data quality management
Standards makers should include data quality management as a core component of the data governance plan so that the standard takes account of a complete, coherent set of data requirements.

Data protection impact assessments
Data protection impact assessments should be included in the standards maker's data governance plan.

Transparency
There should be transparency and clarity of communication in the standards development process. In areas where fairness is considered important or is contested, transparency and clarity of communication are vital to foster trust and satisfy all parties that their concerns have been adequately represented.

Accountability
Measures in place to ensure data ethics and quality, such as by having an ethics committee. Ensuring the data is stress tested, can be replicated etc.

Summary

- Standards and the **role of BSI**
- **Why** we need inclusive data
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Thank you.

If you need any further help…

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